

REMARKS

Claim Objections

Claim 2 has been objected to for the language “extending through the soft cuff,” it being held that the specification discloses the indent as being merely provided on the surface of the soft cuff. There is apparently a misunderstanding of the intent of the claim. The end portion of the hose that does not have the reinforcing rod is called the soft cuff (20), the soft cuff (20) being formed of the flexible material (14). The indent (50) formed in the soft cuff does not extend through all the layers of the flexible material, as evidenced in Fig. 2; however, the indent does extend through the length of the soft cuff (see also Fig. 4 which shows how the indent is formed through the length of the cuff), which is what is being recited in claim 2. Claim 2 has been amended to clarify what is being claimed.

Claim numbering

The numbering and presentation of the claims has been held to not be in accordance with 37 CFR 1.126; it being held that original claim 9 was not included in the “Amendments to the Claims” in Applicants February 19, 2004 response. Applicant believes the claims are correctly numbered as presented in their amendment for the following reasons.

The present application entered the USPTO as a National Stage application of a PCT Application; all papers being presented to the USPTO prior to the expiration of 30 months from the international application filing date. During the Chapter I PCT phase, no Article 19 amendments were made; however, during Chapter II, following the Demand for Examination, amendments to the claims were made, and presented in the format required by the appropriate PCT rules. These amendments to the claims became an Annex to the International Preliminary Examination Report; a copy of both the IPER and the annex (presented in the English language) were submitted with the Transmittal Letter to enter the US under 35 U.S.C. 371.

Because of the amendments to the claims during Chapter II and the claims being presented in English as an Annex to the IPER, the claims initially subject to examination during the National Stage are the claims as amended during PCT Chapter II – not the claims as originally filed with the PCT receiving office. The claims in the Annex number 1 – 13; original claim 9 was deleted and claim 1 was amended. It is those claims 1-13 that are presented in the February 19, 2004 response in the “Amendments to the Claims.” Thus, when introducing a new claim, the next appropriate claim number is 14.

Should this understanding be incorrect, and the claims that were subject to initial examination in the present application be those as originally filed with the PCT receiving office (claim 1-14), than claim 1 as presented in the February 19, 2004 has been improperly presented as there is no indication of what amendments were made to original claim 1.

Clarification on this issue would be greatly appreciated. Absent any instruction to the contrary, Applicant believes that the claims as currently presented are correctly numbered.

35 U.S.C. § 103(a)

Claims 1-3 and 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Taylor (U.S. 5,938,587) in view of Akedo et al. (U.S. 5,899,237). This rejection is respectfully traversed for the following reasons.

Taylor discloses a hose intended to be used in conjunction with endoscopes for medical applications or borescopes for industrial applications. The disclosed tube, having a straight inflexible rigid end and a flexible corrugated end, is to be inserted into another tube-like element to assist in the transfer and the passage of items such as medical instruments or fiber optics within the disclosed tube. The goal of Taylor is to provide a highly flexible tube that can bend up to 180° without kinking or collapsing. The flexibility is provided by forming the flexible end in a corrugated manner so that the adjacent corrugations can be stretched out or pushed together to enable the hose to bend (FIG. 8B). In the embodiment of FIGS 5A-C, the tube is provided with a coil to strengthen the hose without comprising its flexibility. In doing so, the coil is placed between adjacent hose corrugations. In every illustrated instance of the coil reinforced hose, the hose maintains a constant diameter wherein the hose material, not the coil, forms the outer diameter of the hose.

Akedo et al is directed towards hoses that are used directly in industrial applications for transport of mud, water, sand or sludge. The hose is formed of multiple layers and the external reinforcing rod is bonded to the hose, forming the outermost diameter of the hose. Similar to the hose of the present invention, part of the job of the external reinforcing rod is that when the hose is dragged around, the rod encounters most of the external abuse and protects the hose itself from damage, thus to prevent movement of the rod along the hose length and adequately protect the hose, the rod must be bonded to the adjacent layers.

It is has been held that it would have been obvious to modify the hose of Taylor with the teachings of Akedo to "produce a strong, flexible hose having secured reinforcing rod thereon that provides a flexible soft cuffed end portion and provides wear resistance to the

flexible material.”

Applicants respectfully disagree with this rejection for the following reasons.

To establish *prima facie* obviousness, there 1) must be some suggestion or motivation in the art to modify or combine the references; 2) must be a reasonable expectation of success and 3) the combined references must teach or suggest all the claim limitations.

First, there is no motivation or suggestion in the art to combine the references. Taylor is concerned about a tube *liners* used during medical procedures. Akedo is concerned about hoses used in heavy industrial applications. One seeking to improve the medical device of Taylor would not look to a hose used to transport heavy or messy fluids and materials. Additionally, the hoses of Taylor and Akedo are formed significantly different, resulting in different placements of the coils. In looking to modify the corrugated hose of Taylor, one skilled in the art would first look to similar corrugated hoses, not the flat spiral wrapped hose of Akedo.

Second, there is no reasonable expectation of success of the combined art. In modifying the hose of Taylor with the teachings of Akedo, the primary goals and teachings of Taylor cannot be destroyed. It is held that it would have been obvious to bond the reinforcing coil of Taylor to the underlayers, presumably for wear resistance. However, in bonding the coil of Taylor to the underlying material, it is questionable if the hose will still achieve the required flexibility of the hose as seen in FIG. 8B. Taylor requires the flexible portion of the hose to bend at least 180°, enabling the hose to compress on the inner side of the bend and stretch almost flat on the outer side of the bend. Bonding the coil to the hose in the manner of Akedo, where the coil is partially embedded in the hose material, will limit the ability of the hose material to stretch almost flat, thus limiting the curvature to which the hose of Taylor could bend. Thus, to bond the coils of Taylor to the underlying material would destroy one of the primary goals of the hose of Taylor.

It is additionally argued that it would be obvious to provide the reinforcing coil 522 as the outermost diameter of the hose. Applicants disagree with both this position and that there would be a reasonable expectation of success in attempting to make the coil of Taylor form the outermost diameter of the hose. The flexible portion of the hose of Taylor is made flexible by corrugating the hose material, creating pockets for the coil to rest within (see FIGS 7A – 7E). To have the coils form the outermost diameter, either the coils must be bonded to the peaks of the corrugations or the coils must be of a diameter to protrude above the corrugations. If either construction is attempted, there is no certainty that the hose will

remain flexible as desired and shown in FIGS 8A – 8B, thus there is no reasonable expectation of success that will ensure that the hose of Taylor is still operative in the manner desired by Taylor.

Furthermore, in the application of the hose/inner liner of Taylor, it is desired that the inner liner be able to move smoothly within the endoscope; having the coil project above the surface of the main material of the inner liner can affect the movement of the liner through the endoscope. As noted above, the coils of Akedo are there to absorb initial abuse to protect the hose body; there is no such similar circumstances occurring with the hose of Taylor, i.e. the outside of the liner is not subjected to abuse when used in the manner for which it is intended.

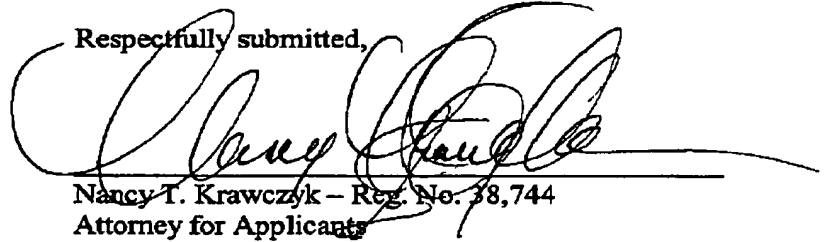
Third, the combined references do not meet or suggest all the claim limitations. In the rejection, the non-corrugated end of Taylor is called a “soft cuff”, however, Taylor identifies that end as an inflexible end, leading one in the art to understand that the non-corrugated end of Taylor is not a soft cuff.

As all three necessary elements of *Graham v. Deere* have not been met, examiner has not established *prima facie* obviousness. It is requested that this rejection be reconsidered and withdrawn.

Regarding claims 2 and 3, concerning an indent through the length of the hose cuff, such an element is not shown or disclosed by Taylor. At the lower left side of the corrugations in FIG. 5B, there is a portion that does not continue up to the top of the hose; however, that is not an indent, but following the helical coils 522, what is seen is the end of the helical coil. There is no indent that extends beyond the coil. The manufacturing method disclosed in FIGS. 7A-7E confirm this – there is no indent in the hose end past the terminal end of the coil.

In light of the amendment and arguments presented above, Applicants believe all of the claims now pending in the subject patent application are allowable. Thus, the Examiner is respectfully requested to allow all pending claims.

Respectfully submitted,



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